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Chapter 65

Analyzing Humanitarian Logistic Coordination for Disaster Relief in Indonesia

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Abstract Humanitarian logistics have been given an attention in recent years since logistic is one of important factors in effective disaster response and disaster relief. There are few researches on humanitarian logistic in Indonesia. In this paper, we aim to map and analyze humanitarian logistic in Indonesia. Therefore, deep interview method has been done to interview some institutions in humanitarian logistic system. We analyze the coordination of humanitarian logistic system using RASIC method. The finding of the deep interview reveals the private sector actively participates in disaster relief. In particular, it is also found the private sector actively participates in disaster relief but they do not collaborate with BNPB. It can be concluded the private sectors are able to take on the role in Indonesia humanitarian logistic system under supervision of BNPB. We finally proposed the RASIC model involving the private sector for Indonesia humanitarian logistic.

Keywords Humanitarian logistic • RASIC • Indonesia

65.1 Introduction

Humanitarian relief environments engage many organizations such as government, local and regional relief organizations, military, and private companies. Each organization has different interest, mandates capacity and logistics [1]. Logistic is one of important part in humanitarian relief, so it is important to make it efficient and effective. Therefore, some researches focus on humanitarian logistic. Liberatore et al. [3] tried to make a model for distributing emergency goods to population affected by disaster. They applied the model in Haiti earthquake case in 2010 and

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concluded that coordinating recovery and distribution operations are important. Ozdamar and Ertem [4] showed that information technology should be integrated in humanitarian logistic to make humanitarian logistic more effective. They got the conclusion by applying survey.

According data from *Badan Nasional Penanggulangan Bencana Indonesia* (BNPB), number of disasters in Indonesia in 2015 until June are 1116 events where dominant in flood (32.1 %), landslide (33.2 %) and waterspout (28.5 %). Due to the disaster frequency, Indonesia needs an efficient and effective humanitarian logistics. However there are few researches on humanitarian logistic in Indonesia. In this research humanitarian logistic in Indonesia is evaluated, and improved by engaging private companies.

65.2 Research Method

In this research, functions of each organization in humanitarian logistics in Indonesia are evaluated using RASIC scheme that is developed by Kaynak and Tuger [2]. RASIC is a tool to set roles of every organization. The benefits of RASIC are developing a clear relation between activities and resources, defining clear responsibility for every resource, and giving suggestion for communication planning. RASIC is an acronym which stands for Responsible, Approves, Support, Informed, and Consulted. Responsible is related to the organization that is ultimately responsible for completing the activity. Approves is related to the organization that has responsibility and authority to take an action. The organization that provides resources or can help responsible organization is defined as supported. Informed is defined as an organization that has to know result of implementation to the activities. Consulted is defined as an organization that contributes the implementation suggestions for making it smoothly.

Data are conducted by interviewing *Badan Penanggulangan Bencana Daerah Jawa Timur* (BPBD), Indonesian Red Cross (IRC) East Java branch, public health office, public social office and survey through email with a logistics company which is DHL international.

65.3 Result

RASIC chart is used for showing the role of each organization in Indonesia humanitarian logistic. The organization includes government, social and private institution. Government institution in humanitarian logistics is *Badan Nasional Penanggulangan Bencana Daerah* (BPBD), public social office and public health office. BPBD is a non-department government institution, which has planning and

operational function in disaster management, and emergency. BNPB was formed according to Indonesian law in year 2007 number 24. Scope of BNPB includes pre-disaster, disaster response and post disaster. BPBD is part of BNPB that has smaller scope which is in provinces or towns. Public health office has a unit to handle health aspects of disaster management. The unit is called *Pusat Penanggulangan Krisis Kesehatan (PPKK Kemkes)*. The unit has the responsibility for providing medicines and medical personnel for disaster response phase. Public social office has responsibility on preparing, giving technical guidance, and supervising the implementation the preparedness' activity, mitigation, response and rehabilitation for natural disaster victims. The Indonesia Red Cross (IRC) has responsibility to prepare temporary distribution points based on the input of local government and assessment. The Indonesia Red Cross works on preparedness, response and rehabilitation phases.

RASIC chart shows the role of every organization in every activity today. We seek to analyze the role of each institution in each activity. Recent RASIC chart is shown in Fig. 65.1.

Where:

- R : Responsible
- A : Approved
- S : Supported
- I : Informed
- C : Consulted

No	Job	Institution			
		BPBD	IRC	Public Social Office	Health Social Office
Preparedness					
1	Community training	RA	RA	RA	RA
2	Information sharing and coordination	RA	I	I	I
3	Collaboration with private sector	RA	I	I	I
4	Provide funding	RA	S	R	R
5	Develop relief standardization	RA		RA	RA (medicines)
6	Prepare buffer stock	RA		RA	
Response					
1	Assessment	RA	RA	RA	RA
2	Coordination with government	RA	I	I	I
3	Sends aid	RA	S	R	R (medicines)
4	To get aid from donator	RA			
5	Providing staffs	RA	R	R	R
6	Operating soup kitchens	S	S	RA	
7	Distributing logistic aids	RA	S		RA
8	Distributing health aids	S	S	S	

Fig. 65.1 The existing RASIC chart

65.4 RASIC Analysis

In the vertical RASIC analysis, BPBD as a coordinator has responsibility for humanitarian logistic in Indonesia in preparedness and response phases. Instead of as a coordinator, BPBD also acts as a decision maker for most of critical activities. For preparing temporary distribution points and giving quick response in limited areas, BPBD is supported by IRC. IRC has responsibility in some activities such as community training, assessment and preparing field staffs. Public social office has activities in most area and responsibility in soup kitchen sector. Public health office focuses on health sector and has responsibility in this area.

Figure 65.1 shows that private sector is not part of humanitarian logistics in Indonesia, although some private sectors have actively participated in disaster relief programs. One of private sector that actively participates in disaster relief program is DHL. DHL is a postal and logistics industry and encompass on three divisions: DHL Express, DHL Global Forwarding, Freight and DHL Supply Chain. DHL is present in over 220 countries. DHL has two humanitarian logistic programs which are Get Airport Ready for Disaster (GARD) and Disaster Response Team (DRT). GARD was developed by cooperation between DHL and United Nations Development Programme (UNDP). GARD program goal is preparing an airport to

No	Job	Institution				
		BPBD	IRC	Public Social Office	Health Social Office	Private Sector
Preparedness						
1	Community training	S	R	S	S	
2	Information sharing and coordination	RI	SI	SI	SI	SI
3	Collaboration with private sector	RA	I	I	I	
4	Provides funding	RA	S	S	S	S
5	Develop relief standardization	RA	I	I	I	I
6	Prepare buffer stock	RA	NA	NA	R (medicines)	S
Response						
1	Assessment	C	RA	I	I	
2	Coordination with government	R	I	I	I	I
3	Sending aid	RA	S	R	R (medicines)	R
4	To get aid from donator	RA	I	I	I	
5	Providing transportation	R	R	S	S	R
6	Providing staffs	S	R	S	S	S
7	First aid operation	S	R	S	S	
8	Operating soup kitchens	S	S	RA		
9	Organizing posts disaster	S	S		RA	
10	Distribute logistic aids	S	S	R		
11	Distribute health aids		S	NA	R	

Fig. 65.2 The proposed RASIC model with private sector

handle escalation of disaster aids. GARD programme has been applied in more than 29 local airports such as airport In Armenia, Bangladesh, Nepal and Indonesia. GARD training was conducted in Indonesia in 2009 and 2011 such as Medan, Aceh, Middle of Sulawesi, Makassar, Bali and Kupang. DRT was developed by cooperation between DHL and *United Nations Office for the Coordination of Humanitarian Affairs* (OCHA). DRT supports on distribution relief including cargo airplane, warehousing and distributing for disaster relief institution. DRT network has more than 400 volunteers who are ready in less than 72 h. DRT has involved helping earthquake disaster in Padang in 2004. They worked for 1 week to organize escalation of aids in Padang airport. DRT also involved helping earthquake disaster relief in Yogyakarta in 2006. The RASIC model including private sector can be seen in Fig. 65.2.

65.5 Conclusion

We study the recent humanitarian logistic systems in Indonesia that involves some institutions such as BPBD and IRC. BPBD acts as a coordinator of other institutions such as IRC, health department and social department. It is found that private sectors have a contribution in humanitarian logistics but it does not include in humanitarian logistics system in Indonesia. One of them is DHL through GARD and DRT program. RASIC method is applied to show the relation between humanitarian logistic in Indonesia and to analyze the role of private sector when it is included in the system. In this research we conclude that private sector can be one of role institution in humanitarian logistic in Indonesia under supervision of BPBD. Second, we change some institution roles such as BPBD should act as coordinator in standardization, assessment, and funding. However, funding can be collected by any institutions under supervision of BNPB. In this research we only show the main model of humanitarian logistic in Indonesia. This research can be developed by detailing the roles of each institution considering their strength, weakness, opportunity and threat and use the strength of one institution to cover the weakness of other institutions. Future research can also be done by integrating an information system between each institution to make the humanitarian logistic system more efficient.

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